

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF COMMERCIAL FISHERIES

CALIFORNIA FISHERY MARKET NEWS MONTHLY SUMMARY

May 1961

Part II—Fishing Information*

Sea-surface temperatures, fishing and research information
of interest to the West Coast tuna-fishing industry
and marine scientists

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ALBACORE FORECAST 1961

For the past year, scientists at the United States Bureau of Commercial Fisheries Biological Laboratory, San Diego, have been analyzing historical oceanographic, meteorological, and fishing records in an effort to understand variations in availability of the albacore off the west coast of North America. The ultimate objective of this analysis is the accurate prediction of the distribution and availability of albacore from year to year as a practical aid to the fishing industry. Various sources of data are being used in the analysis: historical meteorological data from the Extended Forecast Section, U. S. Weather Bureau, Washington, D. C.; current synoptic weather and sea temperature information from ships at sea via U. S. Weather Bureau teletype circuits; historical sea temperature data from the U. S. Bureau of Commercial Fisheries Biological Laboratory, Stanford; salinities and sea temperatures from California Cooperative Oceanic Fisheries Investigation reports; coastal water temperatures from Scripps Institution of Oceanography; and albacore catch and landing data from the California Department of Fish and Game.

Until our analysis of the historical data is completed, detailed up-to-date albacore catch and effort data are available, and we can gather more oceanographic data at sea currently, forecasts will necessarily be restricted. On the basis of relationships we have so far uncovered, we offer a limited prediction for the area south of the International Border (United States-Mexican) for 1961. It is based on the following assumptions: (1) large-scale trends now established in the ocean climate will persist into the summer; (2) the albacore will respond to the ocean environment as it has in the past; and (3) fishing effort will be similar to that in the past. Any major changes that may occur which substantially alter these assumptions will accordingly affect forecast reliability.

We estimate that the fishery will begin farther south than in the past three years and that 10.0 million pounds of albacore will be taken from south of the International Border. The average catch from this region for 1945 to 1959 is 15.9 million pounds (Table 1).

TABLE 1

LANDINGS OF ALBACORE IN MILLIONS OF POUNDS

Source - Calif. Dept. Fish and Game, Marine Resources Operations

<u>Year</u>	<u>Landings from south of Intl. Border</u>	<u>Landings from California waters</u>
1945	12.26	8.78
1946	8.96	9.10
1947	5.76	7.40
1948	25.93	10.50
1949	23.58	20.40
1950	23.60	38.14
1951	17.62	13.28
1952	26.70	23.10
1953	20.49	13.30
1954	11.82	14.29
1955	19.69	9.31
1956	21.06	15.87
1957	20.91	22.61
1958	0.72	25.39
1959	0.00	32.52
Average	15.94	17.60

Our data suggest that the fishery should reach as far south as Guadalupe Island, and even though the center of abundance will probably remain offshore, a limited to moderate coastal fishery may develop.

It is too early in the year to permit us to make a prediction for regions north of the International Border. For previous years, we have noted relationships between temperature in June and early July and area of catch off Oregon and Washington. We will be examining sea surface temperature from the northern region continuously and will keep you advised of our interpretation of this information if we think it is useful in suggesting whether or not there will be a substantial fishery off Oregon later in the year.

Thanks are given to Mr. Hans Klein of Scripps Institution of Oceanography for arranging radio transmission of current salinity and sea temperature data to us from Scripps research vessels at sea.

Staff, Tuna Forecasting Investigation
U. S. Bureau of Commercial Fisheries
Biological Laboratory, San Diego

TROPICAL STORM WARNINGS

The United States Weather Bureau, International Airport, San Francisco, California (through Mr. Corday Counts), has provided the San Diego Biological Laboratory with a copy of Radio KMI schedules of tropical storm advisories and Tehuantepec wind warnings. The Weather Bureau has endorsed our request to publish the schedules for information to fishermen.

The tropical storm advisories cover the region from the west coast of Mexico and Central America out to 140° W. longitude. Tehuantepec wind warnings are for the Gulf of Tehuantepec and 150 miles seaward.

The schedules are as follows:

<u>Call Sign</u>	<u>Broadcast Times</u>	<u>Frequency</u>	<u>Power of Station</u>
KMI	0100, 0300, 0500	4377.4 kc (1)	12 KW
	0700, 1500, 1700	8754.4 kc (2)	12 KW
	1900, 2100, 2300	13,182.4 kc (3)	12 KW
		17,342.5 kc (4)	12 KW
		22,695.5 kc (5)	12 KW

- (1) 1st five minutes of broadcast hours on 4377.4 kc.
- (2) 2nd five minutes of broadcast hours on 8754.4 kc.
- (3) 3rd five minutes of broadcast hours on 13,182.4 kc.
- (4) 4th five minutes of broadcast hours on 17,342.5 kc.
- (5) 5th five minutes of broadcast hours on 22,695.5 kc.

If any of the above five minute broadcasts have to be cancelled because of other traffic, the broadcast will begin on the first full five minutes available on the frequency indicated in the above table. For example, if there is other traffic at 0100, the broadcast then starts at 0105, on 8754.4 kc.

SEA-SURFACE TEMPERATURE CHARTS, EASTERN PACIFIC OCEAN
MAY 1961

Acknowledgements

The following organizations and stations contributed data for the May 1961 charts:

- U. S. Weather Bureau, San Diego, California
- U. S. Weather Bureau Ship Visitation Office, Long Beach, California
- U. S. Naval Communication Station Balboa, Fort Amador, Canal Zone
- U. S. Navy Branch Hydrographic Office, Honolulu, Hawaii; Seattle, Washington; San Francisco and Wilmington, California
- U. S. Coast Guard, Port Hueneme Light Station, Port Hueneme, California
- U. S. Bureau of Commercial Fisheries, Biological Laboratories, Honolulu, Hawaii; La Jolla, California; Seattle, Washington
- U. S. Bureau of Commercial Fisheries, Exploratory Fishing and Gear Research Base, Seattle, Washington
- California Department of Fish and Game M/V Alaska and Scofield
- Hopkins Marine Station, Pacific Grove, California, by J. P. Balesteri
- Humboldt State College by George Allen
- Inter-American Geodetic Survey by Rene Cortes at Salina Cruz, Mexico; David Ortega at Manzanillo, Mexico; Romeo Valencia at Pt. San Jose, Guatemala; Azael Saldana at Pt. Armuelles, Panama; V. E. Castillo at Tumaco, Colombia; Gualberto Tapia at San Cristobal, Galapagos; Jose Lanchimba at La Libertad, Ecuador; A. Campos at Talara, Peru; R. Celis at San Juan, Peru
- Inter-American Tropical Tuna Commission, La Jolla and Terminal Island, California; Piura, Peru
- Kelco Company, San Diego, California
- Newport Beach Lifeguard Service, Balboa, California
- Oregon State College by Bruce Wyatt
- Pacific Oceanographic Group, Nanaimo, B.C., by H. J. Hollister from observations by R. W. Collins at Quatsino Lightstation, J. A. Bournazel at Cape St. James Light, B. Stuart at Amphitrite Point Light, J. M. Hartt at Langara Island Light, personnel of the C.N.A.V. Oshawa

Scripps Institution of Oceanography, La Jolla, California
by Margaret Robinson and Hans Klein
Ships Frances Salman, Trolleggen, Elin Haven, Besseggen,
Kongsholm, Avila and Santa Maria

Charts

Figure 1.--Mean sea surface temperatures ($^{\circ}\text{F}$) derived from approximately 8000 observations. Squares show temperature at weather-ship stations. Numerals on shore are temperatures at coastal and light stations.

Figure 2.--Deviation of sea surface temperatures ($^{\circ}\text{F}$) from long term mean charts of H. O. 225. Hatched areas are colder than mean.

Figure 3.--Deviation of sea surface temperatures ($^{\circ}\text{F}$) from those of May 1960. Hatched areas are colder than 1960.

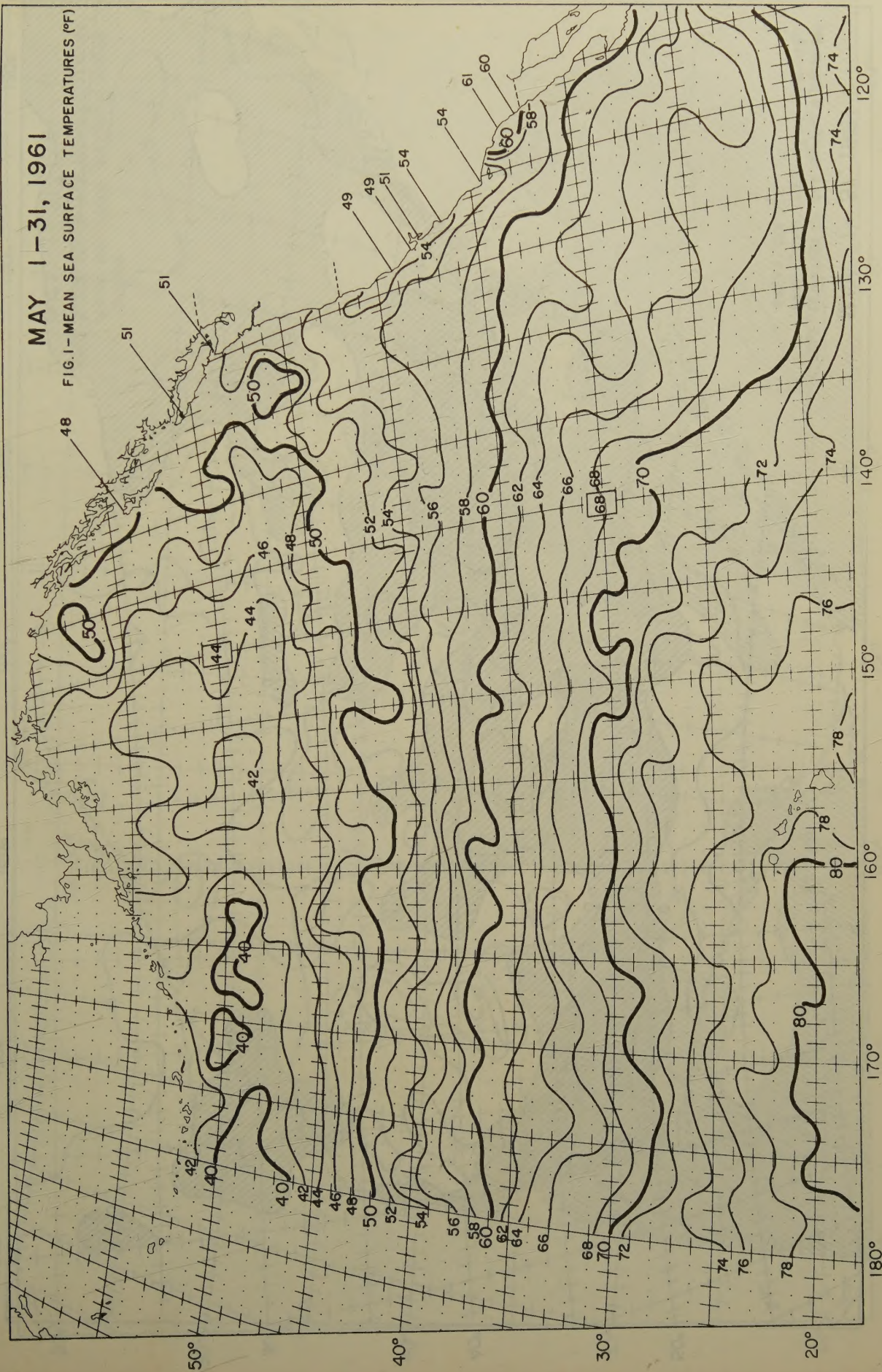
Figure 4.--Sea surface temperatures ($^{\circ}\text{F}$) by 1-degree squares, approximately 2000 observations. Line under temperatures indicates average of two or more observations. Numerals on shore are temperatures at coastal and light stations.

Figure 5.--Deviation of sea surface temperatures ($^{\circ}\text{F}$) May 1961 - May 1960 by 1-degree squares. Shaded areas colder in 1961.

Robert H. Caneday
Fishery Research Biologist

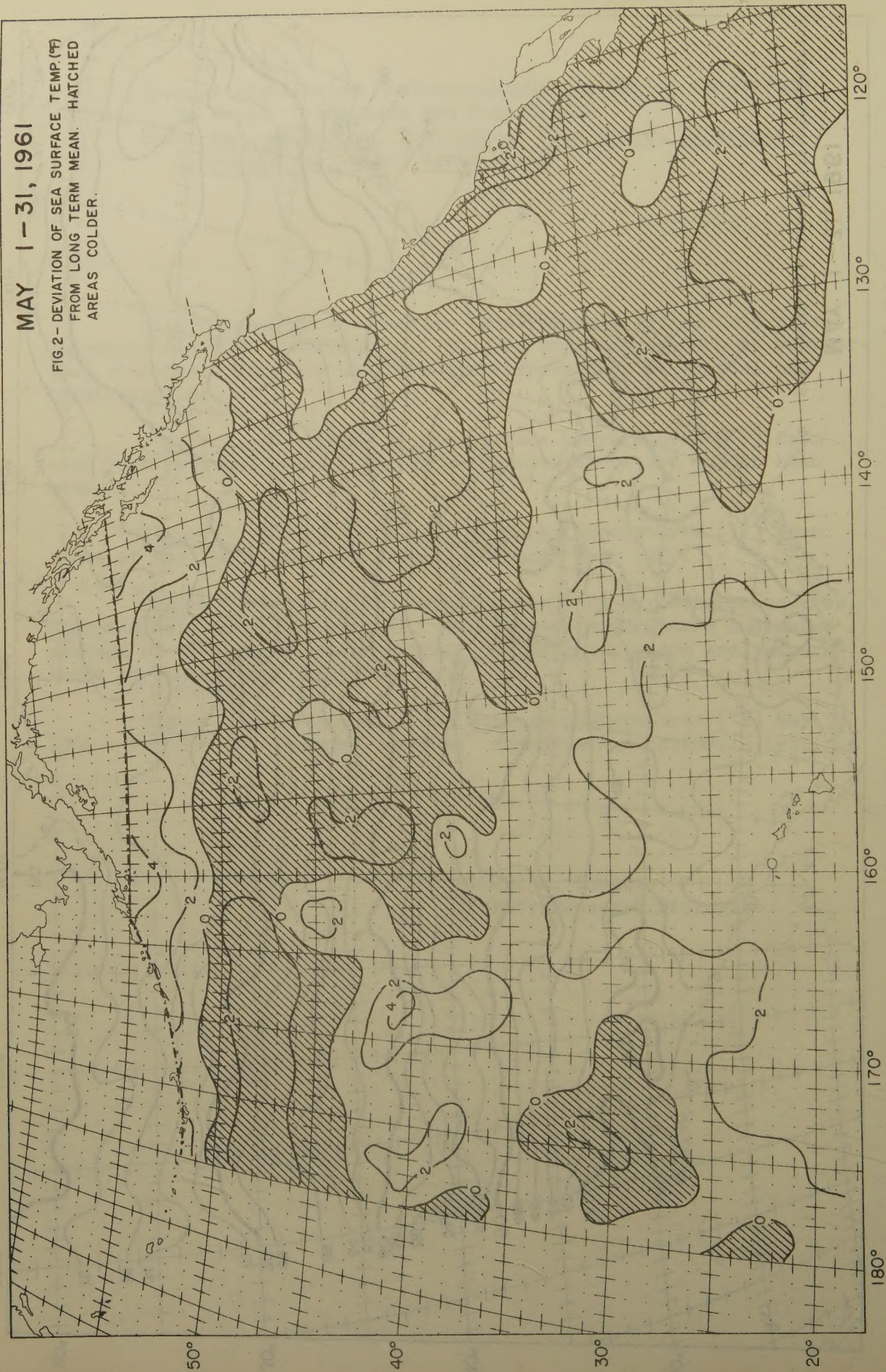
MAY 1-31, 1961

FIG. 1-MEAN SEA SURFACE TEMPERATURES (°F)



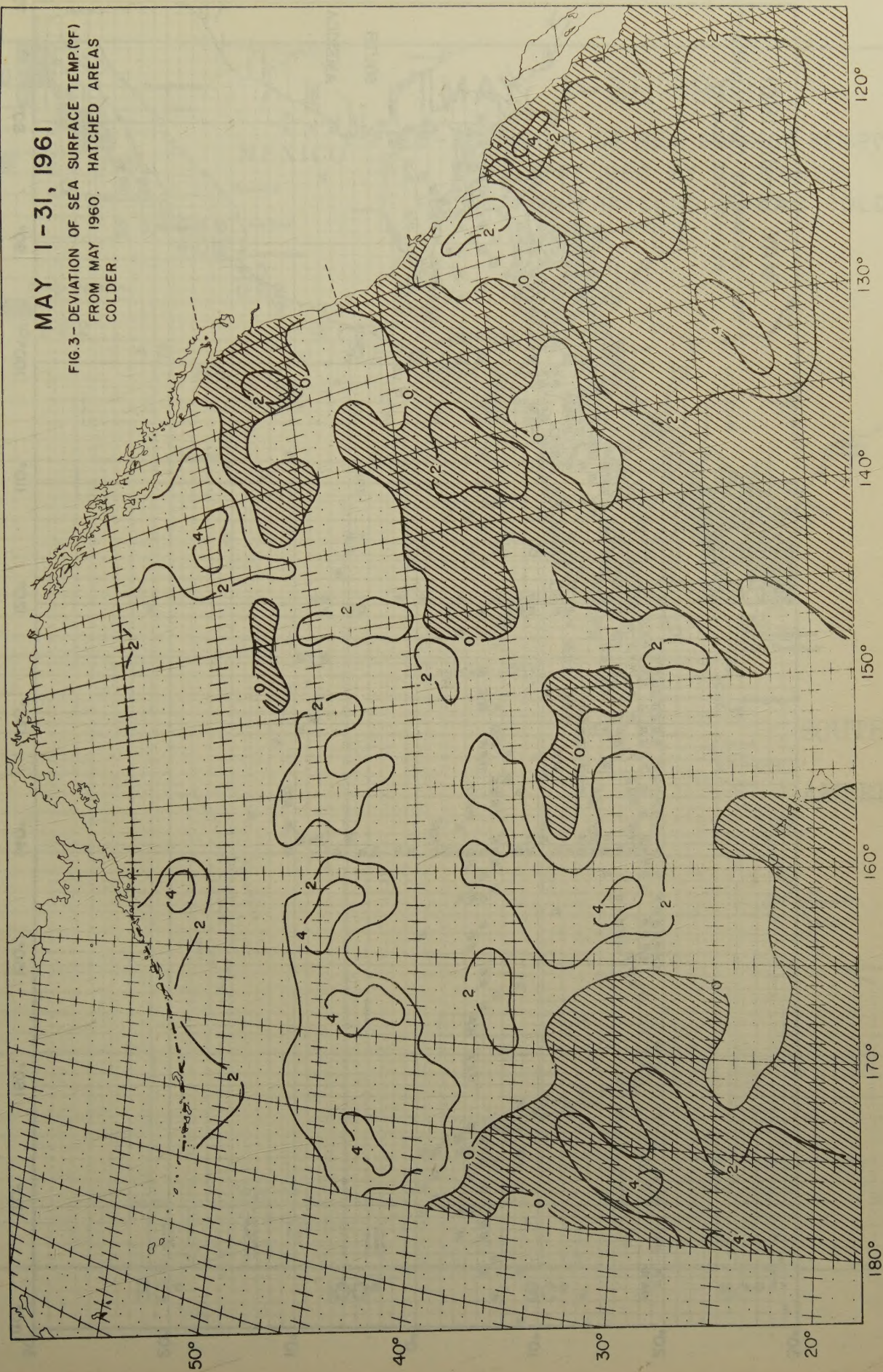
MAY 1-31, 1961

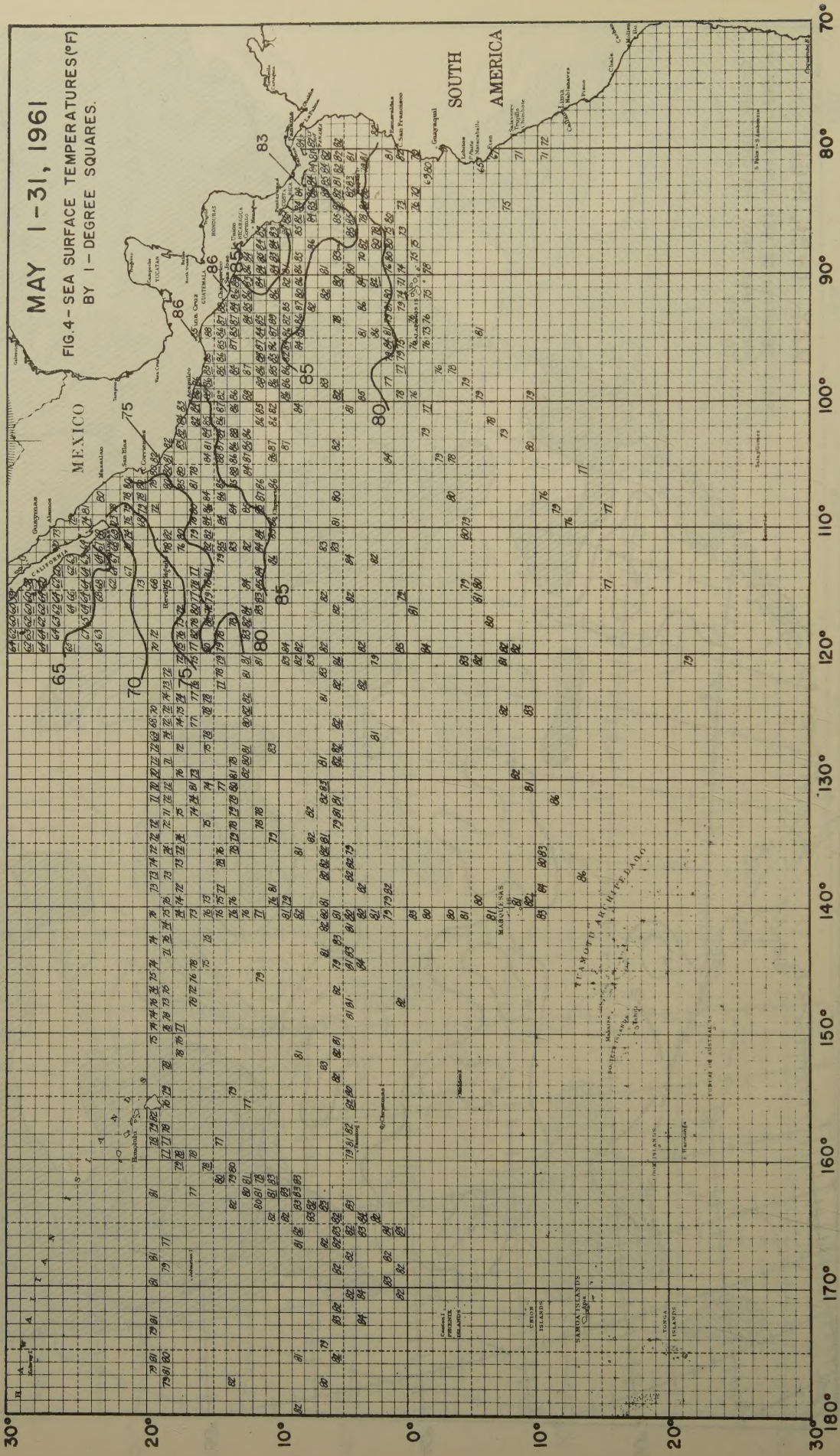
FIG. 2- DEVIATION OF SEA SURFACE TEMP. (°F)
FROM LONG TERM MEAN. HATCHED
AREAS COLDER.



MAY 1-31, 1961

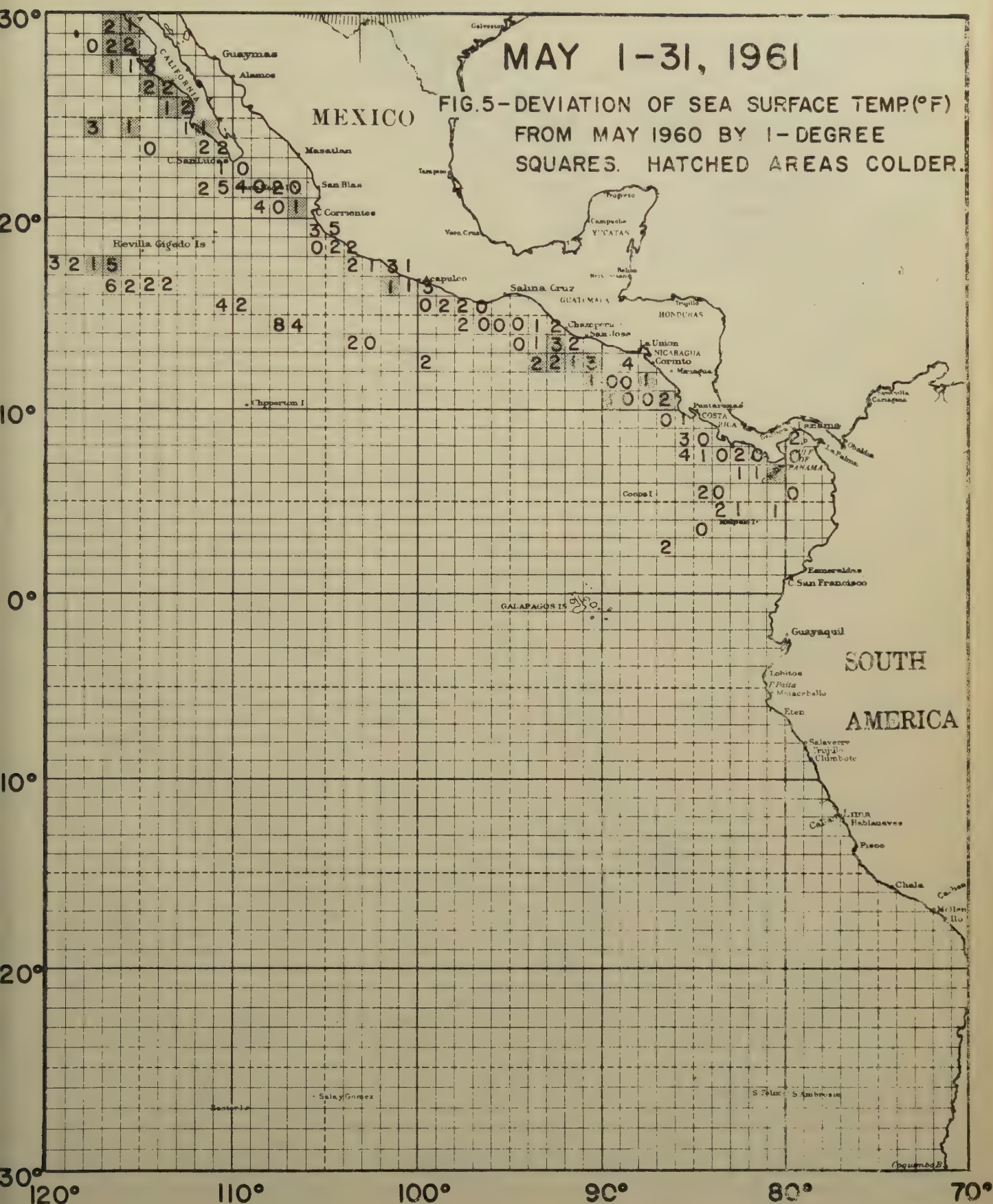
FIG. 3-DEVIATION OF SEA SURFACE TEMP.(°F)
FROM MAY 1960. HATCHED AREAS
COLDER.





MAY 1-31, 1961

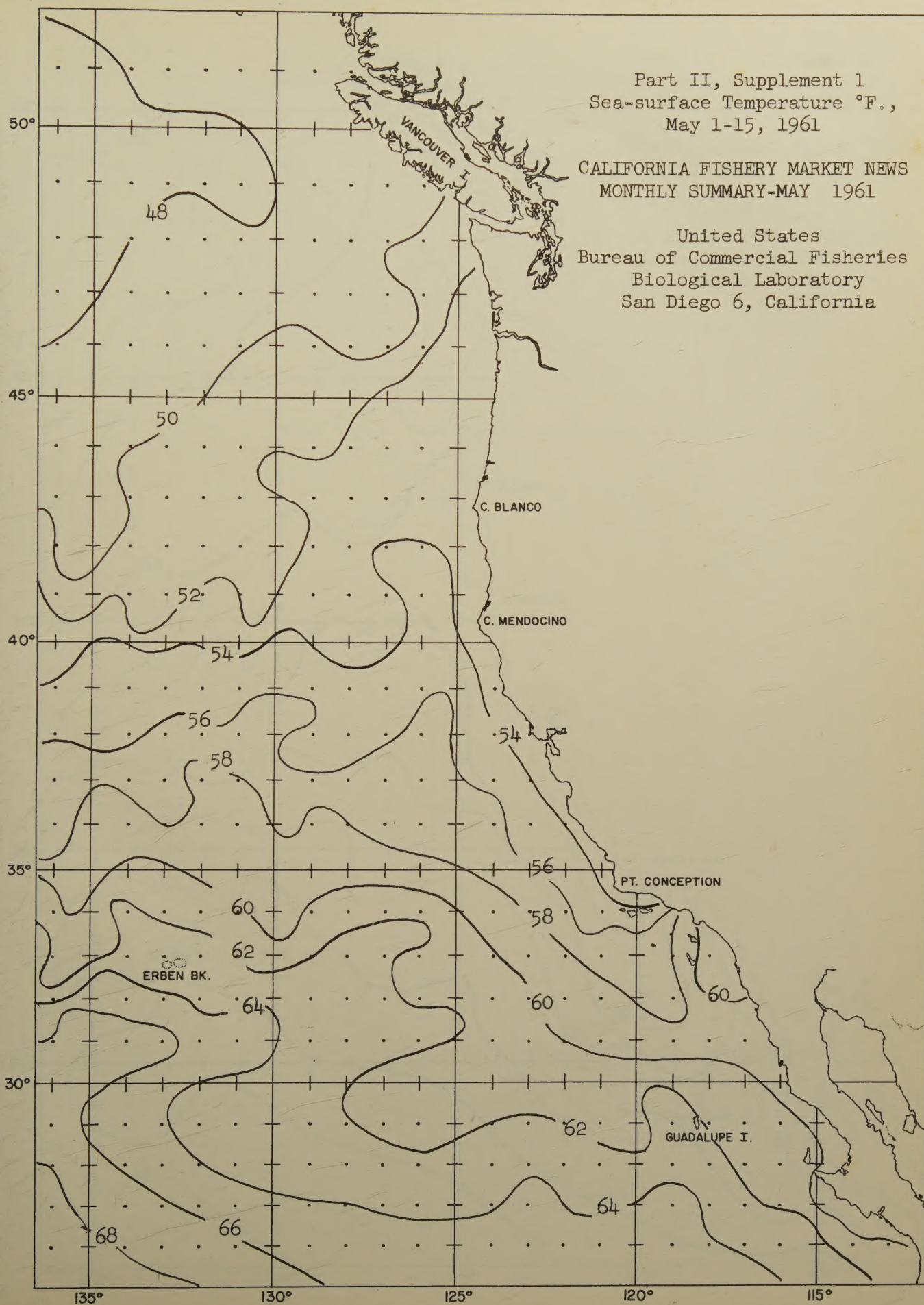
FIG.5-DEVIATION OF SEA SURFACE TEMP(°F)
FROM MAY 1960 BY 1-DEGREE
SQUARES. HATCHED AREAS COLDER.



Part II, Supplement 1
Sea-surface Temperature °F.,
May 1-15, 1961

CALIFORNIA FISHERY MARKET NEWS
MONTHLY SUMMARY-MAY 1961

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Part II, Supplement 2
Sea-surface Temperature °F.,
May 16-31, 1961

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MONTHLY SUMMARY - May 1961

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